EXTENSIVE SUBCUTANEOUS LACERATION OF THE ABDOMINAL MUSCLES.

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THE subject of serious injuries of the abdominal viscera is attracting more and more attention every day. Many cases have been reported of ruptures of the solid and hollow abdominal viscera, without evidence of any injury of the skin or of the abdominal wall, in which early recognition and operation achieved a successful result.

The following case illustrates that a rupture of all of the abdominal muscles may occur, with insignificant injury of the skin. The writer has been unable to find any record of a similar case in which recovery occurred.

The patient, P. F., aged fifty years, a laborer by occupation, was admitted to my service in the Cook County Hospital on the 1st of June, 1903. He gave the following history: About one hour before admission, while intoxicated, he had been caught between the sides of two street-cars, passing in opposite directions, in an effort to save himself from being run over. These cars are so wide that when they are on adjacent tracks only a narrow space, not sufficient for an adult to stand, is left. A companion who was similarly caught and crushed was brought to the hospital dead.

My patient was carefully examined by the house surgeon, Dr. Snyder, who found a swelling about the size of an orange at the middle of the right iliac crest, and extending somewhat below it. From the fact that this tumor was distinctly tympanitic on percussion and could be made to disappear into the abdominal cavity with a gurgle, he made the diagnosis of a traumatic hernia through the triangle of Petit. The writer saw the man three hours after the injury, and confirmed the findings of Dr. Snyder. The swelling described above was distinctly noticeable, was tympanitic, and when its contents were reduced I could feel a gap in the abdominal wall just above the middle of the right crest of the ilium, which readily admitted four finger-tips. The pulse was 108, and there was only slight evidence of shock. Further examination showed a fracture of the fifth and sixth ribs of the left side, and a fracture close to the acromial end of the left clavicle. There were several small hæmatomata over the right gluteal region, and a few ecchymoses into the skin of the right side of the abdomen. The skin otherwise was intact. Owing to the refusal of the patient to consent to immediate operation, the latter was not performed until sixteen hours after the injury. There were now evidences of peritoneal irritation, *e.g.*, increased pulse, tympanites, and tenderness. After the usual preparation, an incision was made over the site of the swelling at the middle of the right crest of the ilium. Upon cutting through the skin, a remarkable condition was found. The only structure which separated the general peritoneal cavity from the external world was the skin. All of the muscles attached to the crest of the ilium (external and internal oblique, and transversalis muscles), as well as the transversalis fascia and peritoneum, were torn loose from their attachments. The skin incision was enlarged in both anterior and posterior directions, and the flaps retracted. It was now found that the injury was far more extensive than we had supposed. From the quadratus lumborum posteriorly to the middle of Poupart's ligament in front every structure which is normally attached to the crest of the ilium and outer half of Poupart's had been torn from its attachments. The lower edges of the muscles were irregularly torn and contused. The general peritoneal cavity had already been partly walled off by adhesions between the ascending colon (which had been displaced inward) and the anterior abdominal wall. In the iliac fossa were many loose pieces of omentum. The ascending colon was contused and dilated. There were no other visceral injuries.

The repair of this great defect presented a difficult problem. I was at a loss how to secure a firm attachment for the torn muscles. To insert sutures through holes drilled in the crest of the ilium would consume too much time. I decided to make use of the tough aponeurotic character of the gluteal fascia, and by drawing the muscles down to it was able to close the defect completely with fourteen kangaroo tendon sutures. I inserted

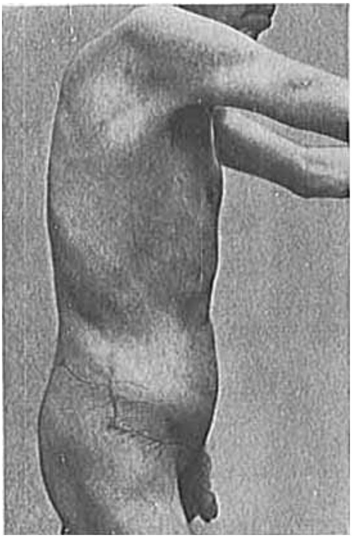

FIG. 1.—Showing cicatrix of skin wound made to expose subcutaneous laceration of abdominal muscles.

these upon the mattress suture principle, by catching all of the abdominal muscles in the upper loop of the suture, and then pulling the entire mass, including transversalis fascia and peritoneum, down over the outer side of the iliac crest, and holding it in place by a similar loop which caught up a considerable area of the gluteal fascia, and then tied the suture. From the anterior superior spine of the ilium to the middle of Poupart's ligament, mattress sutures of kangaroo tendon were passed in a similar manner through the muscles *en masse,* and these then anchored by passing the two ends of the suture through Poupart's ligament itself, similar to the formation of the posterior wall of the inguinal canal in the Bassini operation. Small gauze drains were inserted at each end of the long skin incision. These were removed after forty-eight hours.

Primary union occurred, and the patient made a slow recovery. (Fig. 1.) Convalescence was delayed by a left-sided pneumothorax and a left-sided thrombophlebitis of the femoral vein.

Examination of the patient nine months after the injury shows no recurrence of the hernia. Even hard straining and coughing fail to reveal any bulging or impulse. He now has a left-sided inguinal hernia, which he claims not to have been present before the injury.